

M.Sc. Bioinformatics Sem - I: (2013 COURSE) (CBCS): SUMMER-2018  
ADB (CBCS) 2013 SUBJECT- BIostatistics

Day: Friday  
Date: 13/04/2018

Time: 10:00 A.M. To 1:00 P.M.  
Max Marks: 60

S.2018-1126

**N.B.:**

- 1) Q.1 and Q.5 are **COMPULSORY**
- 2) Solve any **TWO** questions from **Q.2, Q.3, Q.4** from Section I and **Q.6, Q.7, Q.8** from section II.
- 3) Figures to the right indicate **FULL** marks.
- 4) Answers to both the sections should be written in **SEPARATE** answer books.

**SECTION - I**

- Q.1** In a medical camp patients were diagnosed for common problems. Draw **(10)** properly labeled BAR charts to represent the data so that it is convenient for the supervising doctor to include in his report.

	Diabetes	Hypertension	Cardiac
Male	75	20	5
Female	80	30	15

- Q.2** Define or Explain the following terms/concepts (**ANY FIVE**) **(10)**

- a) Variance
- b) Bi-variate distribution
- c) Scatter Diagram
- d) Growth curve
- e) Sample
- f) Standard-Error
- g) Co-variance

- Q.3** In an ICU a High-BP patient was treated for 13 hrs. Calculate **r** (coeff. of correlation), **b** (slope) and **c** (Intercept) for the recovery pattern from the patient data. **(10)**

Hrs (time) in ICU	1	3	5	7	9	11	13
BP(High)	170	165	163	155	157	143	140

- Q.4** When would you use simple random sampling and stratified random sampling. **(10)**  
Differentiate between the two methods

**P.T.O**

## SECTION II

- Q.5** Use Chi-sq test to test association between feedback and background of the patient collected at as hospital regarding quality of services **(10)**

	Good	Fair	Poor
Rural	10	20	15
Semi-Urban	10	20	15
Urban	20	40	30

Given: Table value of Chi-sq at 0.05 prob and 4df is 9.487

- Q.6** Discuss a situation each when you use following tests : **(10)**  
t-test (dependant)  
t-test (paired)  
Chi-square test  
F-test  
Man-Whitney-U test.

- Q.7** What is ANN model? Use neat network diagram to define different models. **(10)**

- Q.8** **Write short notes on (ANY TWO)** **(10)**

- a) Random Variable
- b) Hidden Markov Model
- c) Gaussian Distribution
- d) Fuzzy Logic

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